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GOWANS'S NATURE BOOKS, No. 4

BUTTERFLIES AND MOTHS AT HOME



Common Blue Butterfly (*Lycæna icarus*) at rest on rush.

W. STANLEY W. STANLEY

BUTTERFLIES AND MOTHS AT HOME

Sixty photographs from nature by A. Forrester

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THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 1
(*Limenitis sibylla*)

The young caterpillar sleeps through the winter in a hammock which it constructs from a small leaf. To prevent this leaf falling to the ground with its fellows, the larva attaches it securely to the stem of the plant with many fine silken threads.



THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 2
(*Limenitis sibylla*)

April 21st

The honeysuckle buds having now expanded the caterpillar leaves its winter residence. It feeds, however, principally at night, passing the day on the stem as here shewn.



THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 3
(*Limenitis sibylla*)

June 10th

It has now attained its full growth—



THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 4
(*Limenitis sibylla*)

June 12th

—and spinning a small silken pad on the underside of a leaf, suspends itself therefrom by its hindmost pair of claspers or pro-legs.



THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 5
(*Limenitis sibylla*)

June 14th

It now casts off its larval jacket and appears as a pupa or chrysalis—



THE LIFE-HISTORY OF A WHITE ADMIRAL BUTTERFLY. Plate 6
(*Limenitis sibylla*)

June 27th

—and one bright morning the perfect insect emerges, and hangs from its empty pupa case until its wings are fully grown, and sufficiently stiff for flight.



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY (*Gonepteryx rhamni*). Plate I

June 10th

A half-grown larva of the Brimstone Butterfly or Buckthorn. It feeds at night, and during the day takes up the position shewn, when it is very difficult to see.



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 2
(*Gonepteryx rhamni*)

A large spider which lives among the leaves of the Buckthorn, and preys upon the caterpillars.



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 3
(*Gonepteryx rhamni*)

July 10th

When full fed the larva attaches itself to a twig in the same way as the caterpillar of the White Admiral, but in addition makes a sling from the twig round its body which keeps it in a more or less horizontal position.



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 4
(*Gonepteryx rhamni*)

July 11th

The pupa appears the following day. The discarded skin of the larva may be seen hanging from the twig by a very fine thread.



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 5
(*Gonepteryx rhamni*)

July 26th. 8-10 a.m.

When first the imago emerges from the pupa, its wings are small and limp—



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 6
(*Gonepteryx rhamni*)

July 26th. 8-25 a.m.

—but soon expand—

B



THE LIFE-HISTORY OF A BRIMSTONE BUTTERFLY. Plate 7
(*Gonepteryx rhamni*)

July 26th. 9 a.m.

—and by this time are quite stiff and fit for use.



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 1
(*Zygæna filipendulæ*)

July 15th. 7 a.m.

The cocoon attached to grass.



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 2
(*Zygæna filipendulæ*)

July 15th. 7.5 a.m.

The pupa pushes itself partially through the upper part of the cocoon, using its anal extremity as a lever.



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 3
(Zygæna filipendulæ)

July 15th. 7 6 a.m.

The moth disengages itself—



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 4
(*Zygæna filipendulæ*)

July 15th. 7-6 $\frac{1}{4}$ a.m.

—and having freed its antennae and legs—



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 5
(*Zygæna filipendulæ*)

July 15th. 7-6½ a.m.

—quickly crawls up the grass, leaving the pupa case sticking out of the cocoon.



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 6
(*Zygæna filipendulæ*)

July 15th. 7-21 a.m.

Having found a suitable place where it can hang clear of the grass the wings commence to expand, and when fully grown, but still limp, are folded over the back as shewn.



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 7
(*Zygæna filipendulæ*)

July 15th. 7-40 a.m.

The process being now completed the wings take the natural resting position, and the moth soon flies away to join—



THE EMERGENCE OF A SIX-SPOTTED BURNET MOTH. Plate 3
(*Zygæna filipendulæ*)

—its friends and relations on some neighbouring thistle head.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 1
(*Macroglossa fuciformis*)

The eggs are laid singly in June on the underside of a honeysuckle leaf.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 2
(*Macroglossa fuciformis*)

The egg soon hatches, and the young larva is noted for the curious way in which it eats holes in the leaves of its food plant.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 3
(*Macroglossa fuciformis*)

While very young the caterpillar is liable to be attacked by an ichneumon fly of the family Braconidae, which punctures the skin and deposits an egg beneath. This egg hatches, and the resulting grub lives upon the substance of its host, avoiding vital parts, until it is full fed, when it forces its way out, and spins its cocoon on the leaf beside the unfortunate caterpillar of the hawk-moth, which soon afterwards dies.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 4
(*Macroglossa fuciformis*)

Caterpillar about $\frac{1}{3}$ grown.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 5
(*Macroglossa fuciformis*)

Caterpillar $\frac{2}{3}$ grown

It will be noticed that the caterpillar has now spots along its sides, and the horn has become curved.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 6
(*Macroglossa fuciformis*)

The winter is passed in the pupa state. The chrysalis is of a very ordinary type, and may be found in a very loosely constructed cocoon among dead leaves, on the surface of the ground.



THE LIFE-HISTORY OF A BROAD-BORDERED BEE HAWK MOTH. Plate 7
(*Macroglossa fuciformis*)

The perfect insect emerges the following May.



THE LIFE-HISTORY OF A PRIVET HAWK MOTH. Plate 1
(*Sphinx ligustri*)

Newly hatched caterpillar with the egg shell from which it has emerged.



THE LIFE-HISTORY OF A PRIVET HAWK MOTH. Plate 2
(*Sphinx ligustri*)

Half-grown caterpillar feeding.



THE LIFE-HISTORY OF A PRIVET HAWK MOTH. Plate 3

(*Sphinx ligustri*)

The pupa is subterranean, and may be distinguished from others by its short trunk.



THE LIFE-HISTORY OF A PRIVET HAWK MOTH. Plate 4
(*Sphinx ligustri*)

At rest on trunk of oak.



THE LIFE-HISTORY OF AN EMPEROR MOTH. Plate I
(*Saturnia carpinii*)

Eggs laid among heather.



THE LIFE-HISTORY OF AN EMPEROR MOTH. Plate 2
(*Saturnia carpinii*)

The full-fed caterpillar.



THE LIFE-HISTORY OF AN EMPEROR MOTH. Plate 3
(*Saturnia carpini*)

The caterpillar spins a pear-shaped cocoon, in which it turns to a chrysalis.



THE LIFE-HISTORY OF AN EMPEROR MOTH. Plate 4
(*Saturnia carpini*)

The perfect insect (female).



SOCIABLE CATERPILLARS

Brood of larvæ of Large Tortoiseshell Butterfly (*Vanessa polychloros*).



SOCIABLE CATERpillars

Young larvæ of Buff-Tip Moth (*Phalera bucephala*).



The curious caterpillar of the—



—Lobster Moth (*Stauropus fagi*).



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Caterpillar which has fed on the leaves of an oak tree on which no lichen is growing.

These caterpillars, of all our British species, seem to have the power—



—SCALLOPED HAZEL MOTH (*Odontopera bidentata*)

Caterpillar which has fed on the leaves of a lichen covered willow tree.

—of assimilating themselves to their surroundings most perfectly developed.



PROTECTIVE RESEMBLANCE

CATERPILLARS THAT MIMIC PINE-NEEDLES

Two larvæ of Shaded Broad Bar Moth (*Cidaria variata*).



PROTECTIVE RESEMBLANCE

CATERpillars THAT MIMIC PINE-NEEDLES

Larva of Pine Beauty Moth (*Panolis piniperda*).



PROTECTIVE RESEMBLANCE

CATERPILLARS THAT MIMIC TWIGS

Caterpillars of Pale Oak Beauty Moth (*Boarmia consortaria*).



PROTECTIVE RESEMBLANCE

CATERPILLARS THAT MIMIC TWIGS

Larva of Mottled Beauty Moth (*Boarmia repandata*) on honeysuckle.



' PROTECTIVE RESEMBLANCE

CATERPILLARS THAT MIMIC TWIGS

Hibernating larva of Great Oak Beauty Moth (*Boarmia roboraria*)
on oak.



PROTECTIVE RESEMBLANCE

Larva of Grass Emerald Moth (*Pseudoterpna pruinata*) on genista.



PROTECTIVE RESEMBLANCE

Larva of Brussels Lace Moth (*Boarmia lichenaria*) on lichen-covered branch of oak tree.



PROTECTIVE RESEMBLANCE

Dingy Skipper Butterfly (*Visoniades tages*) sleeping on dead teasel head.



PROTECTIVE RESEMBLANCE

Small Engrailed Moth (*Boarmia crepuscularia*) at rest on trunk of oak tree.



PROTECTIVE RESEMBLANCE

The Grayling Butterfly (*Satyrus semele*) resting among fallen pine needles.



PROTECTIVE RESEMBLANCE

The young larva of the Alder Moth (*Acronycta alni*) much resembles a bird-dropping.



PROTECTIVE RESEMBLANCE

The Angle-shades Moth (*Brotolomia meticulosa*) among dead oak leaves.



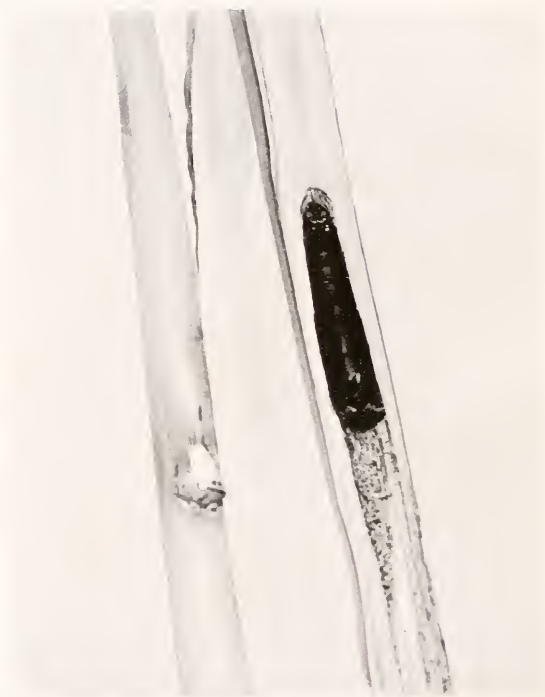
PROTECTIVE RESEMBLANCE

Copper Underwing Moth (*Amphipyra pyramidea*) on tree-trunk.



PROTECTIVE RESEMBLANCE

The caterpillar of the Lilac Beauty Moth (*Pericallia syringaria*), especially the black variety figured, requires a very practised eye to distinguish it from one of the dead and shrivelled leaves of its food plant honeysuckle.



Split bulrush shewing pupa of Bulrush Moth (*Nonagria typhae*).



The caterpillar of the Goat Moth (*Cossus ligniperda*).

This caterpillar is noted for emitting a most unpleasant odour. It lives in trees, making large burrows through the wood. When full grown it may often be found wandering about footpaths and roads.



IN WINTER QUARTERS

Small Tortoiseshell Butterfly (*Vanessa urticae*) hibernating on a bear in loft.

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